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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,382	11/26/2003	Hien Boon Tan	Q78432	6007

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EXAMINER

GRAYBILL, DAVID E

ART UNIT	PAPER NUMBER
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2822

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/721,382

Applicant(s)

TAN ET AL.

Examiner

David E. Graybill

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 1-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claims 1-24 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 1-9-7.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the features of claim 26 must be shown or the feature(s) canceled from the claim(s). In particular, the feature wherein the adhesive layer covers part of said outer lead portion of each of said plurality of protuberances must be shown. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each

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drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 26 is rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility.

In particular, the invention wherein the adhesive layer covers part of said outer lead portion of each of said plurality of protuberances is not supported by either a specific and substantial asserted utility or a well established utility.

Claim 26 is also rejected under 35 U.S.C. 112, first paragraph.

Specifically, since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 25-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. There is ambiguous and/or insufficient antecedent basis for the following language: Claims 25 and 27, "said first face of said die pad portion," "said first face of one of said plurality of inner lead portions," and, "said first face of one of said outer lead portions." In the rejections infra, generally, reference labels are recited only for the first recitation of identical claim elements.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes

that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Yee (6825062) and Minamio (6710430).

At column 7, line 14 to column 8, line 37; column 9, lines 18-56; and column 11, line 58 to column 13, line 53, Yee discloses the following:

A method of assembling an integrated circuit package, comprising: a) providing: a leadframe 10 having a first face and a second face opposite to said first face, wherein said leadframe comprises: an outer frame portion 18, a die pad portion 16 substantially centrally disposed within said outer frame portion, a plurality of tie bars connecting said die pad portion to said outer frame portion, and a plurality of protuberances 11 extending substantially radially inward from said outer frame portion, each of said plurality of protuberances comprising an inner lead portion (illustrated in Fig. 3D directly bonded to 3), and outer lead portion (illustrated in Fig. 3D rightwardly

adjacent to 14), and a post portion connecting said inner lead portion from said outer lead portion, an integrated circuit chip 2 having a first face and a second face opposite to said first face, a first plurality of wires 3 each having a first end and a second end, and a second plurality of wires 3 each having a first end and a second end; disposing an adhesive layer 32 on said first face of said leadframe, whereby said adhesive layer covers said die pad portion, and part of said inner lead portion of each of said plurality of protuberances, wherein part of each of said inner lead portions remains free of adhesive; d) mounting said integrated circuit chip on said leadframe, whereby said second face of said integrated circuit chip is connected to said first face of said die pad portion through said adhesive layer, and whereby said second face of said integrated circuit is further connected to said inner lead portions through said adhesive layer; e) electrically conductively joining said first end of said first plurality of wires to said first face of one of said plurality of inner lead portions; f) electrically conductively joining said second end of each of said first plurality of wires to said first face of said integrated circuit chip; g) electrically conductively joining said first end of each of said second plurality of wires to said first face of one of said lead portions, and h) electrically conductively joining said second end of said second plurality of wires to said first face of said integrated circuit chip.

A method of assembling an integrated circuit package, comprising:

providing: a leadframe having a first face and a second face opposite to said first face, wherein said leadframe comprises: an outer frame portion, a die pad portion substantially centrally disposed within said outer frame portion, a plurality of tie bars connecting said die pad portion to said outer frame portion, and a plurality of protuberances extending from said leadframe, wherein some of said protuberances comprise at least a plurality of inner lead portions and some of said protuberances comprise at least a plurality of outer lead portions; an integrated circuit chip having a first face and a second face opposite to said first face, a first plurality of wires each having a first end and a second end, and a second plurality of wires each having a first end and a second end; b) disposing an adhesive layer on said first face of said leadframe, whereby said adhesive layer covers said die pad portion, and part of said inner lead portions, wherein part of each of said inner lead portions remains free of adhesive; c) mounting said integrated circuit chip on said leadframe, whereby said second face of said integrated circuit chip is connected to said first face of said die pad portion through said adhesive layer, and whereby said second face of said integrated circuit is further connected to said inner lead portions through said adhesive layer; d) electrically conductively joining said first end of said first plurality of wires to said first face of one of said plurality of inner lead portions; e) electrically

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conductively joining said second end of each of said first plurality of wires to said first face of said integrated circuit chip; f) electrically conductively joining said first end of each of said second plurality of wires to said first face of one of said lead portions, and g) electrically conductively joining said second end of said second plurality of wires to said first face of said integrated circuit chip.

To further clarify the disclosure of a post portion, Yee discloses, "FIG. 3B illustrates a case in which two dimples are formed at opposite sides of the each inner lead 12, respectively, in such a fashion that each of them extends partially over an associated peripheral edge of the inner lead 12 and an associated side surface of the inner lead 12." In addition, Yee discloses, "FIG. 3D is a cross-sectional view partially illustrating a semiconductor package 1 fabricated using a lead frame (not shown) provided with at least one aperture, in place of the dimple, as the lead lock 14 for each lead." Therefore, the inner lead portion directly between the dimples/apertures is a post portion.

However, Yee does not appear to explicitly disclose wherein the adhesive layer disposed on said first face of said lead frame in step (b) covers only an outer edge of said die pad portion, thereby leaving a central part of said die pad portion free of adhesive.

Regardless, in the instant claims, the omission of the element of Yee wherein the adhesive layer disposed on said first face of said lead frame in step (b) covers a central part of said die pad portion is obvious because omission of a step or an element and its function is obvious if the function of the element is not desired or required. See *Ex parte Wu*, 10 USPQ 2031 (Bd. Pat. App. & Inter. 1989); *In re Larson*, 340 F.2d 965, 144 USPQ 347 (CCPA 1965); *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975); and MPEP 2144.04IIA.

Also, Yee does not appear to explicitly disclose c) severing said outer lead portion from said inner lead portion by cutting said post portion; f) electrically conductively joining said first end of each of said second plurality of wires to said first face of one of said outer lead portions.

Nevertheless, at column 8, lines 7-52; column 13, lines 18-39 and 41-48; and column 15, lines 12-22, Minamio discloses severing outer lead portion 14 from inner lead portion 16 by cutting a post portion 17, and electrically conductively joining a first end of each of a second plurality of wires 21 to a first face of one of the outer lead portions.

Moreover, it would have been obvious to combine this disclosure of Minamio with the disclosure of Yee because, as disclosed by Yee, it would be advantageous.

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The art made of record and not applied to the rejection is considered pertinent to applicant's disclosure. It is cited primarily to show inventions relevant to the examination of the instant invention.

For information on the status of this application applicant should check PAIR:

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alternatively, applicant may contact the File Information Unit at (703) 308-2733. Telephone status inquiries should not be directed to the examiner. See MPEP 1730VIC, MPEP 203.08 and MPEP 102.

Any other telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (571) 272-1930. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m.
The fax phone number for group 2800 is (571) 273-8300.


David E. Graybill
Primary Examiner
Art Unit 2822

D.G.
28-Mar-07